

17. (AMENDED) A method for breaking the dormancy or quiescence of a plant comprising the steps of:

providing an agricultural composition comprising at least one lipo chitooligosaccharide (LCO) and an agriculturally suitable carrier;

and applying the composition in the immediate vicinity of a seed, tuber or root in an effective amount to enable a breaking of the dormancy or quiescence of the seed, tuber, or root, in comparison to an untreated seed, tuber, or root.

26. (AMENDED) A method for enhancing seed germination, seedling emergence or growth of a plant crop comprising the steps of:

providing a rhizobial strain that expresses a lipo chitooligosaccharide (LCO); and

incubating the rhizobial strain in the immediate vicinity of one of a seed or root of said plant such that said LCO enhances seed germination, seedling emergence or growth of said plant crop, wherein said incubation enhances seed germination, seedling emergence or growth in comparison to a non-inoculated seed or root of said plant.

37. (NEW) The method of claim 1, wherein said composition comprises a bacterial strain that expresses said LCO.

38. (NEW) The method of claim 37, wherein said bacterial strain is a rhizobial strain.

39. (NEW) A method for enhancing seed germination, seedling emergence or growth of a plant crop comprising the steps of:

providing a bacterial strain that expresses a lipo chitooligosaccharide (LCO); and

incubating said bacterial strain in the immediate vicinity of one of a seed or root of said plant such that said LCO enhances seed germination, seedling emergence or growth of said plant crop, wherein said incubation enhances seed germination, seedling emergence or growth in comparison to a non-inoculated seed or root of said plant.

40. (NEW) A method for enhancing seed germination, seedling emergence or growth of a plant crop comprising the step of:

providing a bacterial strain that expresses a lipo chitooligosaccharide (LCO) in the immediate vicinity of one of a seed or root of said plant such that said bacterial strain, upon expression of said LCO, enhances seed germination, seedling emergence or growth of said plant crop, in comparison to a non-treated seed or root of said plant.

41. (NEW) The method of claim 40 wherein said bacterial strain is a rhizobial strain.

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